

Serial No. 10/511,250
Atty. Doc. No. 2002P00676WOUS

Amendments to the Claims:

Please amend the claims as shown. Applicants reserve the right to pursue any canceled claims at a later date.

1 – 12 (canceled)

13. (currently amended) A turbine component, comprising:
a masking layer arranged on a portion of the component; and
a plurality of material layers arranged on the component,
wherein one of the material layers is a thermal barrier coating layer applied to the masking layer and a portion of the thermal barrier coating layer and a portion of the masking layer chemically react to form a water soluble layer that chemically react with the masking layer; and
a water soluble layer formed by the reaction.
14. (previously presented) The turbine component as claimed in claim 13, wherein the turbine component is a blade or vane.
15. (currently amended) The turbine component as claimed in claim 13, wherein the material layers collectively form a ceramic thermal barrier coating.
16. (previously presented) The turbine component as claimed in claim 15, wherein the thermal barrier coating comprises a bond coat.
17. (previously presented) The turbine component as claimed in claim 13, wherein the masking layer comprises carbon arranged on the outer surface of the masking layer.
18. (previously presented) The turbine component as claimed in claim 17, wherein the reaction additionally provides a ceramic layer.
19. (previously presented) The turbine component as claimed in claim 13, wherein the masking layer comprises three sub-layers,

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a first sub-layer is arranged on a base material of the component and provides bonding to the base material of the component,

a second gradient sub-layer arranged on the first sub-layer, and

a third reactive sub-layer arranged on the gradient layer and adapted to react with the layers of material applied to the component.

20. (previously presented) The turbine component as claimed in claim 19, wherein the first sub-layer comprises carbosilane.

21. (previously presented) The turbine component as claimed in claim 19, wherein the gradient layer comprises polysiloxane, a metal, or a metal-ceramic composite.

22. (previously presented) The turbine component as claimed in claim 19, wherein the gradient layer comprises polysiloxane, the metal, and a metal-ceramic composite.

23. (previously presented) The turbine component as claimed in claim 19, wherein a filler material is added to the gradient sub-layer to inhibit thermo-mechanical stresses in the masking layer.

24. (previously presented) The turbine component as claimed in claim 23, wherein a filler material is added to the gradient sub-layer to prevent thermo-mechanical stresses in the masking layer.

25. (previously presented) The turbine component as claimed in claim 19, wherein a filler material is added to the gradient sub-layer to inhibit thermo-mechanical stresses between the masking layer and a substrate of the component.

26. (previously presented) The component as claimed in claim 13, wherein the masking layer is a gradient layer.

27. (previously presented) A turbine blade or vane, comprising:

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a substrate;
a masking layer applied to the substrate; and
a thermal barrier coating layer applied to the masking layer, wherein
a portion of the thermal barrier coating layer and a portion of the masking layer chemically
reacts to form a water soluble layer.

28. (previously presented) The turbine blade or vane as claimed in claim 27, wherein
the masking layer is comprised of a first sub-layer applied to the substrate, a gradient sub-layer
applied to the first sub-layer, and a third reactive sub-layer applied to the gradient sub-layer.

29. (previously presented) The turbine component as claimed in claim 28, wherein the
third sub-layer reacts with the thermal barrier coating layer to form the water soluble layer.

30. (previously presented) The turbine component as claimed in claim 28, wherein the
first sub-layer comprises carbosilane.

31. (previously presented) The turbine component as claimed in claim 28, wherein the
gradient layer comprises polysiloxane, a metal, and a metal-ceramic composite.

32. (previously presented) The turbine component as claimed in claim 28, wherein the
masking layer is applied to a portion of the substrate.